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ABSTRACT

Vocational teachers have a vital interest in students' developing competence in basic academic skills. They are aware that the teaching of basic skills must be a team effort between basic skills teachers and teachers of subject matter areas. Three basic academic skills that are taught in vocational classes are reading, writing, and mathematics. Reading is taught in vocational classes in many ways, varying from reading texts for new information to locating and using reference materials. A variety of approaches may be used when teaching reading; however, the SQ3R (Survey, Question, Read, Review, Recite) method is recommended by many authorities. Non-readers must be taught in appropriate ways as well as be referred for remedial help. Many opportunities occur in vocational classes for improving writing skills, such as writing papers and having them corrected. Finally, using mathematical skills is an integral part of all vocational classes. For example, products are compared, work time plans are made, income is figured, and market orders are entered. The mathematical skills developed in vocational classes are valuable because they consist of real, concrete, hands-on experiences. Although vocational teachers have always taught basic skills, it is now important to identify how they incorporate the basic skills in classes, to teach the skills effectively, and to let the public know that they are teaching basic academic skills in vocational classes. (This paper contains numerous examples of ways to incorporate basic skills in vocational classes.) (KC)

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Teaching Basic Academic Skills in Secondary Vocational Classes

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TEACHING BASIC ACADEMIC SKILLS IN

SECONDARY VOCATIONAL CLASSES

Vocational teachers have a vital interest in students' developing competence in basic academic skills. We realize that the well-being of individuals and families is dependent upon the ability to read, write, and compute effectively. We are also aware that the teaching of basic skills must be a team effort between basic skills teachers and teachers of subject matter areas.

Teachers of the vocational subjects have always taught basic skills as a part of their courses. What is needed today is a three-facet response to the demand for the teaching of basics. First, vocational teachers must be able to clearly identify how we incorporate the basic skills in classes; secondly, teachers must teach the skills effectively; and thirdly, teachers must let the public (and other professionals) know that we are, in fact, teaching basic academic skills in vocational classes. Three basic academic skills which are taught in vocational classes are reading, mathematics, and writing. They are incorporated into classes regularly.

Reading in Vocational Classes

Reading is taught in vocational classes in many ways varying from reading texts for new information, to locating and using reference materials. Specific examples of reading skill development opportunities are:

A. Following directions accurately and sequentially as in:
    1. Reading recipes and preparing food
    2. Reading directions for the care and use of machinery
    3. Reading and following training plans

B. Interpreting Graphs, Charts, Diagrams, and Patterns as:

1. Nutrients source charts
2. Wiring plans
3. Process charts

C. Identifying Meanings of Abbreviations as:

1. Pay check abbreviations
2. Price codes
3. Building codes

D. Interpreting Symbols and Codes as:

1. Recipes
2. Welding symbols
3. Electrical symbols

E. Interpreting Labels as:

1. Hang tags on garments
2. Animal feed labels
3. Personal hygiene products

F. Locating Main Ideas in:

1. Texts
2. News articles
3. Advertisements

G. Interpreting Drawings and Diagrams in:

1. House plans
2. Digestive system
3. Process charts

H. Locating and Using Reference Materials such as:

1. FFA, VICA, FHA, guidebooks
2. Parliamentary procedure
3. Journals and magazines

Until recently, educators believed that reading was the responsibility of the elementary teacher and that the responsibility of other teachers was to develop competency in the content fields. However, recent studies have shown that that approach has not been successful. We cannot depend on reading teachers to produce competent readers without cooperation from subject matter teachers. Additionally research has shown that general reading ability alone is insufficient to ensure comprehension of content area materials. Interdisciplinary learning is critical to the development of this basic skill. We know that if we want to prepare students to learn on their own as adults, we must provide realistic, relevant reading experiences in all subject matter courses.

Using Reading Effectively

A variety of approaches may be used when reading is used as a teaching strategy. However, the SQ3R Approach, or variations of it, is recommended by many authorities. The SQ3R Approach to reading involves these steps:

S(Survey) Look over the assignment before you start. Check the title, the headings, and the charts. (As a teacher you may guide the entire class in this activity.)

Q(Question) Formulate questions to be answered. (The teacher may have these or may draw them from brief class discussion or questions may be formed from headings and subtopics.)

R(Read) Read introductory paragraphs carefully. Skim less important points. Answer questions when you find them. Repeat to yourself the main points you find.

R(Review) Repeat the key points and/or answers to original questions.

R(Recite) Tell what you read in your own words--to someone--or in writing in your notebook.

In using reading as a teaching strategy, teachers must avoid assigning a reading activity until students are clearly aware of the purpose for the reading. Likewise, reading should never be assigned as a time filler or as punishment. A responsible teacher never says, "read the chapter, and answer the questions at the end of the chapter."

Teachers often ask, "What can be done about the non-reader or very slow reader in vocational classes?" Many books have been developed for the below grade level student in vocational education. Examples are Discovering Foods and Discovering Nutrition which may be used for poor readers in Foods and Nutrition classes. Teacher-made handouts developed with simple wording are also useful. Another approach for the non-reader is taped material. Some teachers use the teams-approach when there are several non-readers in a class, i.e., problems are presented to small teams of students, and as a unit, they find answers and solutions. Some students do the reading, and other students make different contributions to the problem solving. It is important for a subject area teacher to realize that

he/she is not a reading teacher, but rather a teacher who uses reading as an effective teaching strategy! It is important to refer a non-reader to the counselor for remediation if one is identified in your class. A teacher cannot force a person to read who does not possess the reading skill, therefore a teacher must not make a reading assignment for the non-reader anymore than they should ask a crippled student to run in a physical education class.

Another common question is, "How do you know that a child cannot read?" There are several clues. Early in the year a teacher may give a reading assignment for diagnostic purposes. By evaluating comprehension and providing opportunity for oral reading a teacher will quickly learn if non-readers are among the students. Informal assessment may be made by asking questions like: does the student follow directions? does the student ask questions? does the student complete a lesson? and does the student use the language of the subject?

Teachers also ask, "How may one judge the reading level of a book." There are several methods; it is not difficult. One commonly used method is the FRY method. Reading teachers and curriculum directors in most schools will have information on its use. The Cloze procedure is also used by many people. Using a method to determine a match between students and texts is an important task of the teacher who would use reading as an effective strategy.

Teachers also ask, "Is it wise to ask students to read

aloud as a classroom activity?" Reading aloud is questionable as an effective technique. Often students do not pay attention. Their minds wander after they have read their section, or they count ahead and study their paragraph while someone else is reading. Many authorities recommend reading aloud as a technique only for special occasions and then not in a round robin but rather by one or two volunteers. Some students enjoy reading aloud. Others do not. Research shows that after the fourth grade some students are very intimidated by being asked to read aloud.

Writing Skills in Vocational Classes

Writing skills are used in all vocational classes. Through activities like the ones shown here, students have opportunities to develop skills which they learned as elementary students.

1. Writing laboratory plans.
2. Writing reports of extended learning experiences.
3. Writing care guides for animals.
4. Completing nutrition charts.
5. Writing recommendations for case studies.
6. Outlining oral reports.
7. Keeping work records for cooperative education classes.
8. Answering essay test questions.
9. Correcting test answers.
10. Participating in scrapbook projects.

Using Writing Skills Effectively

Many opportunities occur in vocational classes for improving writing skills. Teachers help students learn new words for each

new unit of instruction. Spelling, sentence structure, and grammar errors are marked on tests and other papers. Experiences in correcting errors are opportunities for improving skills. Additionally, the correcting of papers is a fine re-teach strategy--a feedback technique necessary for development of writing skills. After a writing experience is completed, the effective teacher responds to the assignment in the following order of activities.

1. React to the content of the written work.
2. Emphasize good points in the piece.
3. Discuss possible additions or changes in content.
4. (Then) Point out how errors detract from understanding of the writers position and material.
5. Have errors corrected.
6. Display written project in an appropriate manner.

In a vocational class, displays may take various forms. Child care guides developed by home economics students may be shared with a local Young Homemakers Chapter. Guides developed by agriculture students may be presented to Young Farmers. List of characteristics of successful workers made by marketing education students may be published in the local newspaper.

Mathematical Skills in Vocational Classes

Use of mathematical skills is an integral part of all vocational classes. Some examples are shown here:

1. Comparing cost of products.
2. Making time work plans.

3. Planning dimensions of objects and products to be constructed.
4. Using measuring devices.
5. Making metric conversions.
6. Calculating the costs of projects.
7. Completing market orders.
8. Developing budgets.
9. Figuring income from individual and family work.
10. Reading register tapes.

Authorities indicate that effective and meaningful mathematical learning must be based on real, concrete, and hands-on experiences. Therefore, the mathematical skills developed in vocational classes through laboratory experiences are extremely valuable in the development of academic skills. The National Council of Teachers of Mathematicians has set ten "basic mathematical skills" which a student should acquire before graduation for high school. Among them are problem solving; applying math in everyday situations; estimation and approximation; measurement; reading, interpreting, and constructing tables, charts and graphs; and using mathematics to predict. All of these skills are used in vocational classes.

Unlike reading and writing, mathematics is not used in vocational courses as a teaching strategy, but rather as a tool. In using mathematics as a tool, the vocational teacher provides opportunity for reinforcement of skills taught in regular mathematics classes. The value to the student in using

mathematics in vocational classes is that it becomes relevant when applied in the laboratory experience. Thus, the student gains a higher level of competency than may be possible in a regular mathematics class. Vocational teachers should be aware that these skills are an integral part of any type of measurement.

Using Mathematical Skills Effectively

To help students use mathematics as an effective tool, the teacher should use sound principles of teaching. Some of those which are particularly related to mathematics are in the following guidelines.

1. When mathematical problems are inherent in a lesson (ex.: Determining how much of a family's income may wisely be spent on housing) use a pattern of presentation that gives students an overview of the problem, sets a purpose for the activity, explains the procedure, provides an example, and provides practice in working the problem.
2. When a solution of a mathematical problem is a part of a lesson, point out the problem during the explanation phase of the lesson. Model the problem, i.e., work a sample problem on the board. Provide practice, i.e., ask students to work a sample problem. Then proceed with the lesson that involves the mathematical procedure.
3. Use visual aids to prompt student's memory; for example, if the day's lesson includes dividing a recipe in half,

place a poster on the bulletin board showing an example of the division of fractions. If the lesson requires students to figure the amount of money needed when a proportion is required for a project, have a poster showing how to work a problem using percentages.

4. Always model a necessary mathematical procedure if it has not been used previously in your class. Plan the model to be used so that it is clear. Spontaneous models often result in confusion. Use a simple model. Be very accurate. Avoid using as a model an example that is distracting. Use simple and correct vocabulary with the example. Label critical elements, and show exceptions.

Telling Others

Vocational teachers must not only teach basic academic skills, they must teach them effectively, and they must let others know (professionals and the public) that they are teaching basic academic skills!

Vehicles for telling this part of your teaching story vary from student-talk to publications. When a teacher makes a serious, planned commitment to help students develop reading, writing, and mathematical skills, students become aware of the activity. The students will know this and discuss it. Therefore, student-talk becomes a strong vehicle for spreading your story. Informal conversation among teachers spreads information effectively. The vocational teacher should make a point of casually mentioning work related to the basics when

talking to other teachers. Phrases such as "modeling a math problem," and "using the SQ3R approach for reading experience" make teachers aware that you are knowledgeable in the use of the basic skills. Conferences with parents provide opportunities for vocational teachers to mention the development of skills to the public. Administrators may become aware of this part of your teaching if you include a goal such as "To improve mathematical, writing, and reading skills of students" in your annual list of professional goals. Carefully made lesson plans also show evidence of the use of these basic academic skills.

Summary

The vocational teacher is a team member in the effort to upgrade basic academic skills of America's youth! We do it regularly, we do it well, and we are committed to telling others about our successes!

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